BOOK REVIEWS.

Science of Statistics: Part II, Statistics and Economics. By RICHMOND MAYO-SMITH. New York: The Macmillan Company, 1899. Pp. xiii+467.

THE appearance of the promised second volume of Professor Mayo-Smith's *Science of Statistics* has been awaited with interest by students of statistics in the United States. While the mass of official statistics concerning economic conditions has grown at a rapid rate, but comparatively little has been done in the way of subjecting this material to a rigid critical examination with a view to determining its value and the more important conclusions to be drawn from it. This lack was to a certain extent met by the report of the Committee of the American Economic Association on the Twelfth Census. This work, however, was restricted to the consideration of those subjects only to which the census relates, and was prepared by different persons to a considerable extent working independently of each other. In the present volume we have a methodical treatment from a single pen of economic statistics generally. Professor Mayo-Smith's work thus has as its first merit that it meets a real want.

In successive chapters the author examines available statistics concerning the more important features of economic life: Consumption, Population as a Labor Force, Land as a Factor of Production, Capital, Wealth, Prices, Money and Credit, Transportation and Commerce, Wages, Rents, Interest and Profits, Labor Disputes, Associations, Finance, Statistics, and Wealth and Incomes and their Distribution. The method pursued, that of first stating the economic question and then following with a consideration of the statistical material that bears upon it, has the great value of bringing out the gaps in the statistical information that it is desirable to have, as well as the material that is actually in existence.

While Professor Mayo-Smith has undoubtedly given us an exceedingly valuable analysis and criticism of existing economic statistics, and one that will contribute not a little to the advancement of the study of statistics in the United States, his work is open to criticism in one or two respects. The first of these is, that as regards a number of

important questions involving a choice of methods, the author has not always stated clearly his own conclusions. After reproducing certain statistics, reference is repeatedly made by a footnote, as on pages 78, 82, and 97 for example, to the fact that the validity of the method pursued in their compilation has been questioned, without any expression of opinion as to whether such criticism is justified or not. In other cases the pros and cons of a problem are given without any attempt to state a conclusion.

A second criticism relates rather to what the book is not than to what it is. The general title *Science of Statistics* is scarcely justified by the contents. Leaving aside the more than doubtful claim of statistics to be considered a science, a book so entitled should cover the whole ground of statistics in a fairly comprehensive and well proportioned way, with especial emphasis upon general rather than particular methods of procedure. This the work does not do. The great problems with which the directors of statistical work have to deal receive but scant or no attention. Of the subjects treated some are considered at length while others of equal importance receive but brief mention. As an instance of the latter may be mentioned the important class of provident and savings institutions which are scarcely mentioned though they are peculiarly susceptible of statistical treatment.

In conclusion, it should be said, that by the foregoing criticism it is by no means intended to convey the idea that Professor Mayo-Smith's book is other than one of extreme value to all persons interested either in statistics or economics. It was only desired to point out what to us seemed the ground that is and is not covered by it. With the method and conclusions of the author when expressed it is difficult to find fault. The questions treated have been handled with a rare skill, and the two volumes stand today as the best treatise on statistics in English and compare favorably with any in a foreign language.

W. F. WILLOUGHBY.

The Growth of Cities in the Nineteenth Century: A Study in Statistics. By A. F. WEBER. (Studies in History, Economics, and Public Law, XI, edited by the Faculty of Political Science of Columbia University.) New York: The Macmillan Company, 1899, pp. xvi + 495.

THIS remarkably well-executed monograph is an outgrowth of a doctoral dissertation. It fully warrants its expansion into this more